

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION**

Joseph Van Loon; Tyler Almeida;
Alexander Fisher; Preston Van Loon;
Kevin Vitale; and Nate Welch,

Plaintiffs,

- against -

Department of the Treasury,
Office of Foreign Assets Control;
Janet Yellen, in her official capacity as
Secretary of the Treasury; and Andrea
M. Gacki, in her official capacity
as Director of the Office of Foreign
Assets Control,

Defendants.

Civil Action No. 1:23-cv-00312-RP

**BRIEF OF *AMICUS CURIAE* ELECTRONIC FRONTIER FOUNDATION IN SUPPORT
OF PLAINTIFFS' MOTION FOR PARTIAL SUMMARY JUDGMENT**

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INTERESTS OF AMICUS CURIAE¹

EFF is a non-profit civil liberties organization with more than 38,000 dues-paying members. Its mission is to ensure that technology supports freedom, justice, and innovation for all the people of the world. As part of that mission, EFF has focused on ensuring that courts consider the potential free speech implications of regulations that affect developers of computer code – quite literally the writers and publishers of that code. EFF seeks to protect those writers, and the millions of others who benefit from the continued development of science, education, and technology.

EFF has directly represented computer scientists, educators, and developers in multiple First Amendment cases, and has also filed amicus briefs raising their interests in both U.S. and international courts. Examples include *Bernstein v. United States Department of State*, 974 F.Supp. 1288 (N.D. Cal. 1997) (counsel), *Universal City Studios, Inc. v. Corley*, 273 F.3d 429 (2d. Cir. 2001) (counsel); *Junger v. Daley*, 209 F.3d 481(6th Cir. 2000) (amicus), *Defense Distributed v. U.S. Dept. of State*, 838 F.3d 451 (5th Cir. 2016) (amicus), and *Green v. Department of Justice*, 54 F.4th 738 (D.C.Cir. 2022) (counsel).

Based on thirty years of experience, EFF knows the importance of the open source community and its process of co-authorship through publication and iterative development by multiple contributors, often volunteers.

¹ No counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than the *amicus curiae* or their counsel made a monetary contribution intended to fund the brief's preparation or submission.

INTRODUCTION

If they are to continue to create the software upon which millions of people around the world rely, open source developers must feel confident that they are not risking criminal liability by merely participating in coding for a project. OFAC's inclusion of "Tornado Cash" as an SDN undermined that confidence.

"Tornado Cash" refers to several things, but one of them is an open source project that was published and collectively developed by many people on the platform Github, a Microsoft subsidiary. OFAC's actions immediately and predictably chilled the speech of dozens of open source developers writing directly on the Tornado Cash project. That effect was exacerbated by Github's understandable decision to remove the code from its website. EFF has also heard from, and about, developers of other open source projects that concern mixers and other privacy-protecting services who became alarmed at the prospect of severe criminal liability for working on those projects.

EFF understands the critical national security interests the SDN list is intended to address. Nonetheless, the First Amendment requires the government to act with more precision than it did here. The severe criminal and civil sanctions that enforce the SDN list are designed to create a wide berth around the individuals and entities named on it. Indeed, the SDN listing operates as a criminal statute with respect to those listed: as soon as a person or item is designated, interacting with it becomes a criminal offence.

There are at least two ways to resolve this problem and prevent its recurrence. First, OFAC can craft its designations more carefully – as it easily could have done here by specifying that its SDN listing did not include the open source project. Second, if OFAC chooses to target First Amendment protected activities like publishing open source code, the agency must ensure that its processes satisfy First Amendment scrutiny. This includes avoiding the kind of

overbreadth and vagueness that leaves open source developers unsure whether they can continue to write and develop the code.

FACTUAL BACKGROUND

I. The Open Source Community and Tornado Cash

As used here, open source software refers to computer code that is, generally through licensure, made available for others to use, copy and improve. It is commonly written and edited in public. Open source development often involves the contributions of multiple volunteers, although many companies also participate in its development.

Open source critical to the overall software industry. Open source software is running in likely every digital device surrounding us. While finding precise statistics is difficult, the open source Linux operating system alone is responsible for hosting around 50% of all of the world's websites.² The core of the Android operating system, which runs on around 70% of smartphones around the world, is also based on the open source Linux operating system.³

Open source also shows up in many other kinds of services and products. The web browsers Firefox and Chromium (the core of Google's Chrome browser) are open source, as are the popular web servers Apache and Nginx. The Openssl project, which provides the encryption for banks, email providers, and credit card transactions, among many others, is also open source. As a result, anyone who uses any significant amount of digital technology probably relies on open source software:

Though most people don't realize it, much of the technology we rely on every day runs on free and open source software (FOSS). Phones, cars, planes, and even many cutting-edge artificial intelligence programs use open-source software such

² W3Techs, Usage Statistics and Market Share of Unix for Websites, <https://w3techs.com/technologies/details/os-unix> (last visited April 26, 2023).

³ Statcounter, Mobile Operating System Market Share Worldwide, <https://gs.statcounter.com/os-market-share/mobile/worldwide> (last visited April 26, 2023).

as the Linux kernel operating system, the Apache and Nginx web servers, which run over 60% of the world's websites, and Kubernetes, which powers cloud computing. The sustainability, stability, and security of these software packages is a major concern to every company that uses them (which is essentially every company). But unlike traditional closed-source software, which companies build internally and sell, FOSS is developed by an unsung army of typically unpaid developers, and is typically given away for free.

Hila Lifshitz-Assaf and Frank Nagle, "The Digital Economy Runs on Open Source. Here's How to Protect It," Harvard Business Review (Sept. 2021).⁴

Many of these software projects are developed collaboratively on the web platform Github, which is akin to a social network for software. People use Github to browse source code, discuss features, report bugs, and contribute new code.

II. Reaction to OFAC's Actions

OFAC originally listed "Tornado Cash" on the SDN list on August 8, 2022. Including the name of an open source project published on a public website was a new and unprecedented use of the SDN list by OFAC that sent an immediate and dangerous signal to the open source community.⁵

Most critically, the host of the project, Github, removed it, effectively censoring the project. Github is a Microsoft subsidiary and enjoys sophisticated counsel, so this cannot be chalked up to a mere over-reaction from individuals unfamiliar with the OFAC processes. Prior to the listing, the Tornado Cash project had a couple dozen contributors, and the ripple effect of OFAC's listing of an open source program reached far wider. It especially impacted projects

⁴ Available at: <https://hbr.org/2021/09/the-digital-economy-runs-on-open-source-heres-how-to-protect-it> (last visited April 15, 2023).

⁵ Jack Schickler, "We Are All F****d": The Developers of Tornado Cash and the Future of Crypto," Yahoo Finance (December 5, 2022), available at <https://finance.yahoo.com/news/f-d-developers-tornado-cash-121648475.html> (last visited April 26, 2023).

developing privacy protective tools both inside and outside of the area of cryptocurrency and decentralized finance.

The OFAC listing also impacted computer science and security education. EFF client Professor Matthew Green teaches computer science at the Johns Hopkins Information Security Institute, including applied cryptography and anonymous cryptocurrencies. Part of his work involves studying and improving privacy-enhancing technologies and teaching his students about mixer computer programs like Tornado Cash. The disappearance of Tornado Cash's repository from GitHub created a gap in the available information on mixer technology that impacted Professor Green's teaching.

In an effort to resolve these concerns, on August 19, 2022 EFF sent an email to OFAC asking to discuss the issue as it pertained to the open source community and education. We received a voicemail acknowledgment of receipt, but no substantive response. On August 22, 2022, EFF published a blog post which received wide circulation, outlining our concerns more generally and on behalf of Professor Green. *See* Kurt Opsahl, "Code, Speech, and the Tornado Cash Mixer," EFF Deeplinks Blog (Aug. 22, 2022).⁶

About five weeks later, on September 13, 2022, OFAC added FAQ Answer 1076 to their public FAQs about sanctions. That FAQ reads, in relevant part:

While engaging in any transaction with Tornado Cash or its blocked property or interests in property is prohibited for U.S. persons, interacting with open-source code itself, in a way that does not involve a prohibited transaction with Tornado Cash, is not prohibited. For example, U.S. persons would not be prohibited by U.S. sanctions regulations from copying the open-source code and making it available online for others to view, as well as discussing, teaching about, or including open-source code in written publications, such as textbooks, *absent additional facts*. Similarly, U.S. persons would not be prohibited by U.S. sanctions regulations from visiting the Internet archives for the Tornado Cash

⁶ Available at: <https://www.eff.org/deeplinks/2022/08/code-speech-and-tornado-cash-mixer> (last visited Apr. 27, 2023).

historical website, nor would they be prohibited from visiting the Tornado Cash website if it again becomes active on the Internet.

OFAC FAQ 1076 (emphasis added).⁷ This announcement made very unlikely any legal action against Professor Green for specific educational uses, or others for basic copying, making available, and teaching using the extant code.

While this clarification was welcome, it did not resolve the confusion around the scope of the SDN listing. The FAQ says that copying, distributing, and teaching the code are only permitted “absent additional facts,” without specifying what additional facts might create criminal liability. The FAQ is also silent about further development or reuse of the code for other purposes. Developers do not have clear notice about whether they can, for instance, take a piece of the code and use it in another program, including another kind of mixer. Finally, by issuing the clarification in a FAQ rather than clarifying the designation itself, OFAC significantly reduced the number of people who would learn of the narrowing, especially the non-expert individuals who participate in open source development.

This confusion is reflected in subsequent developments. The original repository for Tornado Cash now has the “Public Archive” tag that marks it as no longer receiving active development. Unarchived forks, or copies of the code, exist on Github, but even the most active of them have only seen less than ten updates since OFAC’s actions in August of 2022. And while some developers have moved the Tornado Cash code to another platform, called Gitea, activity there has been similarly limited.⁸ One developer is actively seeking to drive the project forward and has sought support from the community expressly for the purpose of defraying the cost of

⁷ Available at <https://ofac.treasury.gov/faqs/1076> (last visited April 25, 2023).

⁸ Tornado Cash Gitea Server, <https://development.tornadocash.community/>.

unknown legal liability.⁹

ARGUMENT

I. The First Amendment Protects the Development and Publication of Tornado Cash on Github.

It is well-settled that laws targeting the internet raise serious First Amendment concerns, *see Reno v. ACLU*, 521 U.S. 844, 868-70 (1997), whether or not the laws specifically mention “speech.” *E.g.*, *Sandvig v. Sessions*, 315 F. Supp. 3d at 1, 12-13 (D.D.C. 2018) (applying First Amendment analysis to unauthorized access prohibitions in Computer Fraud and Abuse Act); *United States v. Yung*, 37 F.4th 70, 77 (3d Cir. 2022) (rejecting argument that the Anti-Cyberstalking Act targets conduct and not speech).

It is equally settled that the publication of computer code, especially in the context of scientific development, is protected expression. As the first court to recognize this in *Bernstein v. Dept. of State* observed over twenty-five years ago:

This court can find no meaningful difference between computer language, particularly high-level languages as defined above, and German or French....Like music and mathematical equations, computer language is just that, language, and it communicates information either to a computer or to those who can read it...

Bernstein v. U.S. Dep’t of State, 922 F.Supp. 1426, 1435 (N.D. Cal. 1996) (internet publishing of encryption code protected by the First Amendment). *See, e.g.*, *Universal City Studios, Inc. v. Corley*, 273 F.3d 429, 448 (2d Cir. 2001) (“Instructions that communicate information comprehensible to a human qualify as speech whether the instructions are designed for execution by a computer or a human (or both).”); *Junger v. Daley*, 209 F.3d 481, 485 (6th Cir. 2000) (holding that “[b]ecause computer source code is an expressive means for the exchange of

⁹ “Gozy,” Remuneration and accounting, <https://forums.tornadocash.community/t/15-remuneration-and-accounting>

information and ideas about computer programming,” it is protected by the First Amendment).

Finally, the fact that speech can be used by others to assist in potentially dangerous activities also does not limit its protection under the First Amendment. *Herceg v. Hustler Magazine, Inc.*, 814 F.2d 1017, 1019 (5th Cir. 1987). In *Herceg*, the Court held that the First Amendment shielded Hustler Magazine from liability for the death of a young man who engaged in “autoerotic asphyxiation” after reading how to do it in the magazine. *Id.* The Court explained that “first amendment protection is not eliminated simply because publication of an idea creates a potential hazard.” *Id.* at 1020; *accord Winter v. G.P. Putnam’s Sons*, 938 F.2d 1033, 1034 (9th Cir. 1991) (publisher not liable for illness from eating mushrooms described in its Encyclopedia of Mushrooms).

After all, “[m]uch speech is dangerous. Chemists whose work might help someone build a bomb, political theorists whose papers might start political movements that lead to riots, speakers whose ideas attract violent protesters, all these and more leave loss in their wake.” *Am. Booksellers Ass’n v. Hudnut*, 771 F.2d 323, 333 (7th Cir. 1985), *aff’d mem.*, 475 U.S. 1001 (1986), *reh’g denied*, 475 U.S. 1132 (1986). Yet “[t]he prospect of crime . . . by itself does not justify laws suppressing protected speech.” *Ashcroft v. Free Speech Coal.*, 535 U.S. 234, 245 (2002).

Thus, the First Amendment protects the publication and development of the open source computer program Tornado Cash on Github and the fact that the code may be subsequently used by others to take illegal actions does not undermine that protection. OFAC must meet the standards of the First Amendment if it seeks to include publication of the program on Github within the reach of the SDN list. It has not.

II. OFAC's Inclusion of "Tornado Cash" On the SDN List Resulted in a Vague and Overbroad Restriction on Speech.

The First Amendment requires the government to precisely define what is prohibited when its regulations implicate speech. OFAC's inclusion of "Tornado Cash" on the SDN list was anything but precise. OFAC's inclusion of any entity or individual on the SDN list triggers the potential for very serious civil and criminal penalties, including under strict liability.¹⁰ Thus OFAC's inclusion of "Tornado Cash" on the SDN list, without more, created significant liability for those who interact with the computer program, possibly regardless of their knowledge of any violation of sanctions law.¹¹

A vague rule regulating expression will "inevitably lead citizens to 'steer far wider of the unlawful zone' ... than if the boundaries of the forbidden areas were clearly marked." *Grayned v. City of Rockford*, 408 U.S. 104, 108 (1972) (quoting *Baggett v. Bullitt*, 377 U.S. 360, 372 (1964)). That is what happened here. Lacking clear guidance as to what would run afoul of its

¹⁰ Criminal liability may be imposed against a person who willfully commits, attempts to commit or conspires to commit, or aids or abets in the commission of, an unlawful act pursuant to the International Emergency Economic Powers Act (IEEPA), the Act pursuant to which most sanctions regulations are issued. Criminal Liability pursuant to the IEEPA may include a fine of not more than US\$1 million or, if a natural person, a prison term of not more than 20 years, or both. 50 USC 1705(c).

¹¹ From the OFAC press release issued upon adding Tornado Cash to the SDN list: "As a result of today's action, all property and interests in property of the entity above, Tornado Cash, that is in the United States or in the possession or control of U.S. persons is blocked and must be reported to OFAC. In addition, any entities that are owned, directly or indirectly, 50 percent or more by one or more blocked persons are also blocked. All transactions by U.S. persons or within (or transiting) the United States that involve any property or interests in property of designated or otherwise blocked persons are prohibited unless authorized by a general or specific license issued by OFAC, or exempt. These prohibitions include the making of any contribution or provision of funds, goods, or services by, to, or for the benefit of any blocked person and the receipt of any contribution or provision of funds, goods, or services from any such person. "U.S. Treasury Sanctions Notorious Virtual Currency Mixer Tornado Cash," available at <https://home.treasury.gov/news/press-releases/jy0916>

prohibition, programmers became afraid to participate in the project and Github censored it entirely from its website, before restoring it in “archive” form only, *see* Factual Background, *supra*. Developers of other projects, especially those that increase financial privacy, reasonably worried that their work could be subject to criminal liability under the SDN scheme in a moment’s notice as well.

Although OFAC mitigated some of the uncertainty when it later issued its FAQ, that effort was substantively insufficient. The FAQ exempted just a few actions, narrowly tied to educational purposes. It failed to address such basic issues as further development or reuse of the code. Worse, the FAQ kept open the door to prosecution based upon an unspecified number of “additional facts,” adding further ambiguity to an already vague restriction. This ongoing vagueness has resulted in a chilling effect which persists today.

OFAC’s FAQ clarification was also procedurally insufficient. By issuing a FAQ rather than actually amending the SDN listing itself, OFAC ensured that its clarification would receive less attention, and be harder to find, than the governing SDN order. Such a process might be sufficient if OFAC was addressing the small number of well-counseled companies who must keep a close eye on the sanctions list. It is no way to update the large and unorganized open source developer community where very few individuals have counsel, much less export counsel who can keep track of all of the places where OFAC could issue guidance or other information that might moderate the impact of the actual SDN listing.

III. OFAC’s Designation of “Tornado Cash” On the SDN List Was An Overbroad Restriction on Speech.

The First Amendment also required OFAC to calibrate its legitimate efforts to account for potential spillover consequences that could chill speech. The Constitution “gives significant protection from overbroad laws that chill speech within the First Amendment’s vast and

privileged sphere,” *Ashcroft*, 535 U.S. at 244. A regulation is impermissibly overbroad when a substantial number of its applications are unconstitutional when judged in relation to its legitimate sweep. *United States v. Stevens*, 559 U.S. 460, 473 (2010).

The inclusion of “Tornado Cash” on the SDN list was a significant incursion into protected speech both in absolute terms and in comparison to any “legitimate sweep” of OFAC’s designation. *U.S. v. Williams*, 553 U.S. 285, 292 (2008); *U.S. v. Hernandez-Calvillo*, 39 F.4th 1297, 1309 (10th Cir. 2022). Where a law can reach protected speech, as here, the government does not get the benefit of the doubt. *NAACP v. Button*, 371 U.S. 415, 432 (1963) (“If the line drawn ... between the permitted and prohibited activities ... is an ambiguous one, we will not presume that the statute curtails constitutionally protected activity as little as possible.”).

As explained above, OFAC’s designation reached a wide range of protected expression by many who sought to contribute to the Tornado Cash open-source project. OFAC recognized as much when it subsequently published its FAQ and narrowed the reach of its original listing. Yet by that point, the government had already chilled a substantial amount of expression and the FAQ still left a wide range of expression subject to the sanctions regime. The reaction by speakers affected by OFAC’s designation shows that it is “susceptible of regular application to protected expression.” *City of Houston v. Hill*, 482 U.S. 451, 467 (1987). To be sure, OFAC’s designation had a legitimate purpose—preventing sanctioned transactions. But OFAC had the ability to tailor its prohibition to that legitimate concern, or at the very least, to clarify at the outset that it would not be applied to the open source project hosted on Github or that it would only be applied to actual transactions, not the code itself.

The fact that multiple less speech-restrictive alternatives were available to OFAC underscores the breadth of its designation. And the legitimate sweep of OFAC’s designation

cannot save its regulation from violating the First Amendment, particularly when there are alternative avenues to enforcement. *See Hernandez-Calvillo*, 39 F.4th at 1310 (holding that the availability of “alternative prosecutorial tools dilutes the force of [a law’s] legitimate applications”); *see also Keyishian v. Bd. of Regents of Univ. of State of N.Y.*, 385 U.S. 589, 609 (1967) (“The breadth of legislative abridgment must be viewed in the light of less drastic action for achieving the same purpose.” (quoting *Shelton v. Tucker*, 364 U.S. 479, 488 (1960))); *United States v. Playboy Entertainment Grp, Inc.*, 529 U.S. 803, 823-24 (2000).

IV. Under Either Strict Or Intermediate Scrutiny, OFAC’s Inclusion Of Tornado Cash The Computer Program Fails The First Amendment.

In addition to being vague and overbroad, the inclusion of Tornado Cash violates the substantive requirements of the First Amendment, and indeed fails either strict or intermediate scrutiny.

A. OFAC’s Designation Fails Strict Scrutiny

As detailed above, courts have uniformly held that the publication of code is speech for purposes of the First Amendment. But no court has yet determined the level of First Amendment scrutiny required when reviewing the inclusion of published open source code on the OFAC SDN sanctions list.

The Supreme Court’s recent decisions in *Reed v. Town of Gilbert*, 576 U.S. 155 (2015) and *City of Austin v. Reagan Nat’l Advertising of Austin, LLC*, 596 142 S.Ct. 1464 (2022) hold that government action affecting expression is content-based, and therefore subject to strict scrutiny, where it “singl[es] out specific subject matter for differential treatment.” *City of Austin* at 1471, quoting *Reed*, 576 U.S. at 169.

OFAC singled out Tornado Cash because of its specific subject matter and function –

protecting the privacy of financial transactions.¹² This, in turn, is based upon the content of the programs, so the “substantive message” of the content of the computer program is directly relevant to the application of the law. *See e.g. City of Austin*, 596 U.S. at 1472 (“Unlike the sign code at issue in *Reed*, however, the City’s provisions at issue here do not single out any topic or subject matter for differential treatment. A sign’s substantive message itself is irrelevant to the application of the provisions.”). In short, OFAC’s inclusion of Tornado Cash on the SDN list – which is based upon its function as a privacy-assisting tool – means that the inclusion is content-based and must survive strict scrutiny.

“When a plausible, less restrictive alternative is offered to a content-based speech restriction, it is the Government’s obligation to prove that the alternative will be ineffective to achieve its goals.” *Playboy*, 529 U.S. at 816. The government’s own actions here demonstrate that less restrictive alternatives existed – the government’s later FAQ limited the reach of its SDN order in significant ways and could have gone further. Most obviously, a FAQ or an SDN listing that simply defined Tornado Cash as excluding the open source hosted project is a reasonably plausible alternative that was readily available to OFAC.

B. The OFAC’s Designation Fails Intermediate Scrutiny

Under intermediate scrutiny, governmental action can only be sustained if “it furthers an important or substantial governmental interest; if the governmental interest is unrelated to the suppression of free expression; and if the incidental restriction on alleged First Amendment freedoms is no greater than is essential to the furtherance of that interest.” *Turner Broadcasting System, Inc. v. FCC*, 512 U.S. 662 (1994) (internal quotation marks omitted). While the

¹² And as Plaintiffs rightly point out, it’s even more concerning when the transactions impacted are themselves protected by the First Amendment, such as political donations.

government's interest in preventing money laundering by countries such as North Korea is a substantial interest unrelated to free expression, the incidental restriction on First Amendment freedoms OFAC created by including the code itself on the SDN list goes far beyond what is essential to further that interest.

By including Tornado Cash in a way that implicated the publication and development of the code on an open-source platform, OFAC caused Github to take it offline and, as a further result, sparked significant fear in the community of developers that had been collectively writing the code. It discouraged educational and scientific uses of the code, and further development for other lawful uses. It also discourage the potential reuse of portions of the code for other legal and societally beneficial purposes.

The government implicitly recognized that impact when it issued the FAQ to try to clarify that the listing was not intended to impact narrow educational uses and republication. But the government's circumspect and narrow wording ensured that the FAQ would fail to mitigate that impact.

CONCLUSION

Based upon the foregoing, EFF urges this Court to hold that the inclusion of Tornado Cash open source project on the SDN list violated the First Amendment.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on April 27, 2023, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system which will send notification of such filing to the following to all counsel of record.

/s/ Thomas S. Leatherbury
Thomas S. Leatherbury